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DARBY & DARBY P.C.
P.O. BOX 770
Church Street Station
New York, NY 10008-0770

EXAMINER	
LIN, WEN TAI	

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/507,179
Filing Date: 2/25/2005
Appellant(s): Ralf Widera et al.

Erik R. Swanson

For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 12/20/2007 appealing from the Office action mailed 6/27/2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,459,682	Ellesson et al.	10-2002
EP-1039691	Farrell et al.	9-2000
6,847,613	Mimura et al.	1-2005
6,751,663	Farrell et al.	6-2004

(9) Grounds of Rejection

1. Claims 13-15, 17-20, 22-23, 25, 27 and 29-31 are rejected under 35 U.S.C. 102(e) as being anticipated by Ellesson [U.S. Pat. No. 6459682] in view of Farrell [EP 1039691] <u>or</u> Farrell [U.S. pat. No. 6751663].

2. It is noted that Farrell [EP 1039691] and Farrell [U.S. pat. No. 6751663] belong to a same patent family. For convenience all the Farrell references in this office action are cited from U.S. patent No. 6751663.

3. As to claims 13 and 17, Ellesson teaches the invention substantially as claimed including: a method for transmitting measured information from a measuring computer to a control computer of a measuring system, the measuring computer and the control

computer being interconnected via a telecommunications network [e.g., Abstract], the method comprising:

combining measured data into characteristic values having a lower volume than the measured data; and transmitting the characteristic values [e.g., statistical data such as bandwidth, packet loss, delay, etc., are network characteristic values] from the measuring computer to the control computer [e.g., col.1 lines 49-55; col.3 lines 8-20; col. 7, lines 1-15; note that it is obvious that Ellesson's statistical data is obtained from measured traffic data having lower volume than the raw data].

Ellesson teaches that traffic has to be closely monitored in an attempt to satisfy customer's expectation of network performance that is recorded in the service level agreement (SLA) [col.1, lines 44-55]. Ellesson further teaches that in situations when there is traffic congestion, edge devices may restrict traffic flow in certain region of the network based on collected statistical data and quality of service (QoS) policy [e.g., claims 3 and 14; col. 5, lines 55-62]. However, Ellesson is silent about how the statistical data are collected so as to influence various traffic policies (such as QoS control for differentiated services) at the implementation level. In other words, Ellesson does not teach the implementation details such as associating the obtained characteristic values with a time of combining (e.g., a time when network characteristic values are derived).

However, time stamping a created information record is a typical practice in the art of network communication. In the field of network monitoring, Farrell teaches a method of converting local traffic information into high level network traffic characteristic that is useful for QoS monitoring and QoS policy control [e.g., col. 31, lines 5-33]. In

Farrell's system, data collectors create network accounting records (NARs) to identify local data flows or activities. These activity NARs are combined at flow aggregating processors to form summary NARs [e.g., Figs. 7 and 8B; col.4, lines 15-30; col. 7 line 66 – col.8 line 12]. Each NAR is time stamped when the record is created [see Table 1 or col.8, lines 30-33; col.9, lines 45-61]. That is, a summary NAR is combined from a plurality of activity NARs and provides high level network characteristic information [col.9, lines 16-30].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make use of Farrell system's distributed QoS monitoring processes to fulfill Ellesson's QoS policy control because the ingress and egress devices in Ellesson's system can be separated very far apart and therefore correlating local traffic flows with service levels can be rather difficult. An ordinary skilled artisan would recognize that either Farrell's or Miruma's QoS monitoring/assurance process fits right into Ellesson's SLA architecture. For example, Farrell's NARs aggregation process can effectively supply Ellesson's QoS policy control modules or directory servers with relevant network traffic statistics on a per-user basis. That is, through time-stamped NARs correlation, implementation of differentiated services becomes feasible on a network due to the fact that a user's SLA service level is identifiable from among the traffic flows [see Farrell: col.5, lines 13-16; col.31, lines 14-33 and 53-58; and Ellesson: col.2, lines 1-4; col.6, lines 16-26 and col. 7, lines 26-38].

As to claim 14, Ellesson further teaches that the telecommunications network includes at least one of an internet and an intranet [e.g., Fig. 1B, wherein A1, A2 are

premise networks (or intranet) and E1, E2 are situated in the Internet environment (col.1 lines 8-12)].

As to claim 15, Ellesson further teaches that the measured data includes a plurality of measurement parameters, and wherein the combining is performed according to the respective measurement parameters [col.6 lines 3-15].

As to claim 18, Ellesson further teaches that the method comprises determining a time interval for combining the measured data as a function of a measuring method [e.g., col.12 lines 40-56].

As to claim 19, Ellesson further teaches that the measuring system includes a second measuring computer [e.g., an egress device] and wherein measurement packets are transmitted between the measuring computer [e.g., an ingress device] and the second measuring computer [col.5 line 66 –col. 6 line 2; note that the edge devices include ingress and egress devices, wherein traffic flows from the ingress device to the egress device (see Figs. 1A and 1B)].

As to claim 20, Ellesson does not specifically teach that the measurement packets include User Datagram Protocol (UDP) measurement packets.

However, UDP is a well known data transfer protocol mostly used in application area which is less sensitive to packet loss. For example Farrell teaches that UDP is one of the protocols used for reporting traffic state [e.g., paragraph 143].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use UDP in Ellesson's system because statistical information tends to be less sensitive to packet loss in a environment where network traffic does not experience drastic changes.

As to claim 22, Ellesson further teaches that the measured data includes unidirectional transmission characteristics [note that the measured data include traffic flowing from ingress to egress devices].

As to claim 23, Ellesson further teaches that the combining and transmitting are performed using the measuring computer, and wherein the measuring computer functions as a receiver and the second measuring computer functions as a sender [Abstract; col.5 lines 63-65; note that both the egress and ingress, or intermediate, devices function as receiver receiving traffic data and function as a sender sending the statistical data (to the directory server)].

As to claims 25-27 and 29-31, since the features of these claims can also be found in claims 13-15, 17, 19 and 22-23, they are rejected for the same reasons set forth in the rejection of claims 13-15, 17, 19 and 22-23 above.

Claims 16, 21, 24, 26 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellesson et al.(hereafter "Ellesson")[U.S. Pat. No. 6459682], as applied to claims 13-15, 17-19, 22-23, 25, 27 and 29-31 above.

As to claim 16, Ellesson further teaches that the characteristic (i.e., the statistics) of the traffic flow is probed periodically [col. 7, lines 1-6].

Ellesson does not specifically teach that the characteristic values include at least one of a minimum, a mean value, a maximum, and a standard deviation of the measured data over a time interval.

However, statistical data constituting at least one of a minimum, a mean value, a maximum, and a standard deviation of the measured data is well known in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made that Ellesson's traffic statistic include at least a minimum, a mean value, a maximum, and a standard deviation of the measured data because it is well known that the nature of network traffic is rather stochastic and it only makes sense to characterize the fluctuating data with statistical values such as mean value or standard deviation, etc.

As to claim 21, Ellesson further teaches that the characteristic values include statistics of packet loss, which is obtained periodically [col. 6 lines 3-15].

Ellesson does not specifically teach that the characteristic values include a sum of all packets lost and a maximum of all successively occurring packet losses, and further comprising determining the sum of all packets lost and the maximum of all successively occurring packet losses during a detection of measurement packet losses in a time interval.

However, finding the sum of all packets lost and a maximum of all successively occurring packet losses in a successively operating period is well known statistics that can be obtained from measured traffic data.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to obtain the aforementioned data as part of the statistical values reportable to Ellesson's directory server because the information is useful for characterizing a SLA (Service Level Agreement) [col.1 line 49 – col.2 line 12].

As to claim 24, Ellesson further teaches that the characteristic values include statistics of one-way packet delay, loss, throughput, and response time etc. [see the architecture of Figs. 1A-1B; col.1 lines 49-55; col.6 lines 3-15].

Ellesson does not specifically teach the characteristic values include a mean one-way delay, a maximum one-way delay, and minimum one-way delay, a standard deviation of a one-way delay, a mean IP delay variation, a maximum IP delay variation, a standard deviation of an IP delay variation, a packet loss, and a packet throughput.

However, statistical information as listed is well known and has been used for characterizing the performance of a network. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the aforementioned items in Ellesson's statistics because these are useful parameters for deciding if the network performs as expected in the SLA.

As to claims 26 and 32, since the features of this claim can also be found in claims 13, 16, 19-20, 22-24 and 29, it is rejected for the same reasons set forth in the rejection of claims 13, 16, 19-20, 22-24 and 29 above.

(10) Response to Argument

Applicant's argument is two-fold:

(1) Neither Farrell (the secondary prior art) nor Mimura (the later supplied evidence) teaches the feature of "associating the characteristic values with a time information of the combining. That is,

(2) the examiner shows no motivation for combining the teachings of Ellesson and Farrell.

In response to point (1): Applicant is directed to the various passages reciting Farrell's teaching of forming summary NARs out of a plurality of activity NARs. In the field of network monitoring, Farrell teaches a method of converting local traffic information into high level network traffic characteristic that is useful for QoS monitoring and QoS policy control [e.g., col. 31, lines 5-33]. In Farrell's system, data collectors create network accounting records (NARs) to identify local data flows or activities. These activity NARs are combined at flow aggregating processors to form summary NARs [e.g., Figs. 7 and 8B; col.4, lines 15-30; col. 7 line 66 – col.8 line 12]. That is, a summary NAR is combined from a plurality of activity NARs to provides high level network characteristic information [col.9, lines 16-30] and each NAR is time stamped when the record is created [see Table 1 or col.8, lines 30-33].

As another example, Mimura also teaches network activity monitoring, wherein statistical information about local traffic is formed at selected switches/routers. The packets containing statistical information are time stamped [e.g., 79, Fig. 7 and 89, Fig.8]. It is noted that the time information START, END, and DURATION in Figs. 7-8 altogether marks an interval on a time line during which the statistical values are derived. For example, the average numbers of packets passed per unit time [col.7, lines 7-10] is normally derived from a number of instantaneously measured packet passing rates during a predetermined time interval. The process of averaging equates to summing up (or combining) individually measured data samples and then divides the sum by the number of samples used. Since every passing packet's timing contributes to the averaging process, each of the stamped END, START and DURATION time values can be regarded as "a time of the combining" of the measured packet passing rates.

As to argument pint (2): Both Farrell's and Mimura's systems are suitable for QoS monitoring and/or QoS assurance (i.e., for carrying out a service level agreement) [Mimura: col.3, lines 53-56; Farrell: col.31, lines 53-56]. A clear motivation is that Ellesson's teaching of the SLA architecture is on a conceptual level and therefore it needs a detailed QoS implementation plan. An ordinary skilled artisan would recognize that either Farrell's or Miruma's QoS monitoring/assurance process fits right into Ellesson's SLA architecture. For example, Farrell's NARs aggregation process can effectively supply Ellesson's QoS policy control modules or directory servers with relevant network traffic statistics on a per-user basis. That is, through time-stamped NARs correlation, implementation of differentiated services becomes feasible on a

network (either a connection or connectionless oriented netowrk) due to the fact that a user's SLA service level is identifiable from the among the complicated traffic flows [see Farrell: col.5, lines 13-16; col.31, lines 14-33 and 53-58; and Ellesson: col.2, lines 1-4; col.6, lines 16-26 and col. 7, lines 26-38].

For at least the above reasons, it is submitted that either the combination of Ellesson and Farrell or that of Ellesson and Mimura read on Applicant's claimed invention.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Wen-Tai Lin/

Primary Examiner, Art Unit 2154

Conferees:

/Wen-Tai Lin/

Primary Examiner, Art Unit 2154

/Nathan J. Flynn/

Supervisory Patent Examiner, Art Unit 2154

/John Follansbee/
Supervisory Patent Examiner, Art Unit 2151